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China Report

AGRICULTURE

No. 136

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PEOPLE'S REPUBLIC OF CHINA

ABSTRACTS

I. GENERAL INFORMATION

FALSE COLOR SATELLITE MAPPING OF HUBEI PROVINCE COMPLETED

Wuhan HUBEI RIBAO in Chinese 23 Mar 81 p 2

[Article: "False Color Composite Satellite Imagery for Province Completed"]

[Text] Recently, the Provincial Cartographic Bureau successfully completed the mission given it by the State Cartographic General Bureau to make a quantitative soil surface and resource distribution 1:250,000 scale false color composite satellite image for the State Agricultural Commission on a trial basis.

The 1:250,000 scale false color composite satellite image represents a new product of China's survey and cartographic organs. Hubei Province had represented a cartographic blank spot which this recent success has filled.

This is not an object shown in true color but a man-made, enhanced color satellite image which has numerous advantages; it can be read directly and easily. In addition to being employed for quantitative analysis of the soil area and resource surveys, it can also be used for such things as topographical surveys, updating maps, geological prospecting, probing the oceans and monitoring environmental pollution, etc.

CSO: 4008/306

COMMODITY RATIO OF AGRICULTURAL PRODUCTS

Guangzhou NANFANG RIBAO in Chinese 16 Feb 81 p 4

[Article: "Commodity Rate of China's Agricultural Resources and Agricultural Commodities"]

[Text] China has a total land area of 14.4 billion mu, second only to the USSR and about the same size as Canada and the United States. But in terms of population average, each person has only 14.5 mu, much lower than the world per capita average amount of land (49 mu).

China has 1.49 billion mu of cultivated land, or an average of 1.5 mu per capita, which is far far lower than countries with a small population relative to land area, and even lower than India with a large population relative to available land (an average of about 4 mu per capita). It is about half the world average of 4 mu per capita. Calculated in terms of population average, forestlands, grasslands, and lake areas are also vastly lower than the world average. Not only are agricultural resources available for use seriously inadequate in terms of population average, but for a great length of time existing agricultural resources have sustained very great damage, with erosion, in particular, being extremely serious.

Additionally, natural conditions for agricultural production in China are not very good. Every year one area or another is stricken with calamity, and consistency is lacking from one year to another. During the past 30 years, each year an average 420 million mu was visited with calamity. Looked at historically, China's agriculture has usually been "3,4,3," i.e., in every 10 years, 3 years had bumper harvests, 4 years had average harvests, and 3 years had lean harvests.

China's commodity grain rate is about 15 percent. In terms of an annual grain output of 650 billion jin, commodity grain amounts to about 100 billion jin of unprocessed food grains. The commodity rate for economic crops such as cotton, sugar, tobacco, and tea is generally more than 85 percent. The commodity rate for oils is around 55 percent; for pork and aquatic products, the commodity rate is about 65 percent. In 1978, each member of the farming population provided a value of about 70 yuan in excess agricultural products. In 1979, following a rise in the price of farm products, the value of excess agricultural products provided by each member of the farming population climbed to only a little more than 80 yuan.

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CSO: 4007

BRIEFS

POTATO GROWING METHOD--Beijing, 7 Apr (XINHUA)--A new breakthrough in growing potatoes has been achieved by Jin Xin, an amateur agronomist in Shenyang, Liaoning Province. Using the newly developed technique, the output of potatoes has been doubled on experimental plots in seven provinces and regions in China. Using the technique, a forestry region in northern China achieved an average per mu yield of over 5,000 jin of potatoes in 1980, a 200-300 percent increase compared with when using the old technique. [Beijing XINHUA Domestic Service in Chinese 0737 GMT 7 Apr 81 OW]

CATTLE RAISING CONFERENCE--Chengdu, 12 Apr (XINHUA)--The national conference on the work of marketable cattle raising bases called by the Animal Husbandry Bureau of the Ministry of Agriculture ended in Sichuan's Bazhong County on 12 April. The conference called for strengthening and improving the work at marketable cattle raising bases built in 140 counties to promote the production of marketable cattle. Various systems of responsibility in production have been implemented at these bases and this has played a very important role in the development of cattle breeding. [Beijing XINHUA Domestic Service in Chinese 1456 GMT 12 Apr 81 OW]

EDIBLE OIL OUTPUT--Beijing, 11 Apr (XINHUA)--The country set a new record for edible oil procurement in the year from April 1980 to March 1981. In the 17 years preceding 1979, total edible oil output lingered around 3 billion jin, but in 1980 output increased to 4.93 billion jin. As of the end of last February, the amount procured had reached 2.63 billion jin, excluding the month of December. Among the various kinds of edible oil, increases of rapeseed and sunflower seed output relatively stood out. In the past 3 years rapeseed output doubled and vegetable oil output accounted for one-third of the total edible oil output increase. Sunflower seed output doubled in 1981, and the total area sown to sunflower seed increased from 3.5 million mu in 1979 to 13 million mu in 1980. [Beijing XINHUA Domestic Service in Chinese 1301 GMT 11 Apr 81 OW]

SOUTH CHINA RIVER FLOODS--Beijing, 10 Apr (XINHUA)--Heavy rains have caused water levels to rise in the Minjiang River in Fujian Province, the Gangjiang River in Jingxi Province and the Xiangjiang River in Hunan Province. On 10 April, the water in the Minjiang River near Fuzhou and in the Gangjiang River near Nanchang was more than 1 meter above the flood warning level, according to information released by the central flood prevention office. At the moment, the water in the Minjiang River and the Xiangjiang River has begun to fall, but the water in the lower reaches of the Gangjiang River is still rising. [Beijing XINHUA Domestic Service in Chinese 1152 GMT 10 Apr 81 OW]

WHEAT GROWING AREA RAINFALL--Beijing, 15 Apr (XINHUA)--Rain fell in some of north China's winter wheat growing areas in the last 2 days, easing the drought there, according to a report from the Central Meteorological Bureau. On April 13 and 14, between 3 to 20 millimeters of rain were recorded in Beijing, Tianjin, Shanxi, Hebei and Shaanxi. These winter wheat growing areas have been menaced by dry weather since the beginning of the year. There was some rainfall in late March, but scanty precipitation this month has complicated the situation as the winter wheat needs an increasing amount of water. The latest rainfall, though limited, will help growth of the wheat and benefit the ongoing spring plowing and sowing in north China. [Text] [Beijing XINHUA in English 0818 GMT 15 Apr 81 OW]

UN-SPONSORED AGRONOMISTS' COURSE--Xian, 15 Apr (XINHUA)--A month-long un-sponsored training course for 40 Chinese agronomists on the exploitation of China's vast loess plateau wound up Monday in Xian, capital of Shaanxi Province. Sponsored by the UN Development Program and the Food and Agricultural Organization, four UN specialists briefed the trainees on worldwide research on the subject, including agricultural climate data analysis and application, laws of soil erosion and preventive measures for that erosion on loess plateaus. The course included field surveys of Shaanxi's loess and mapping of the locations along with proposals to reclaim the soil under a comprehensive project embracing farming, forestry and animal husbandry. [Text] [OW161421 Beijing XINHUA in English 0815 GMT 15 Apr 81 OW]

CSO: 4020/172

MATERIAL FOR SPRING FARMING SAID IN GOOD SUPPLY

Guangzhou NANFANG RIBAO in Chinese 12 Feb 81 p 1

[Article by Ssutu Zhuoyao [0674 1778 0587 1031]: "Agricultural Means of Production Elements at All Echelons in Guangdong Province Actively Supply Means of Production. Meet Needs of Various Forms of System of Responsibility in Rural Villages"]

[Text] Guangdong Province's market for the means of agricultural production is extremely active with plenty of goods on hand and an increase in supplies. Last year, the province's retail figure for goods sold as means of production was 305 million yuan, a 13.6 percent increase over the previous year. Supply of chemical fertilizer urgently needed for increased agricultural production was 3.86 million tons, more than 400,000 tons more than for the previous year. Quantities of several goods such as chemical pesticides and herbicides, spraying apparatus, metal farm implements, and plastic sheeting also increased by different degrees. After various forms of a system of responsibility for production were instituted in rural villages of Guangdong Province, enthusiasm of the peasants ran very high, and they hurriedly increased purchases of all kinds of means of production goods for agriculture. Acting in accordance with the principle of a combination of planned regulation and market regulation, and while doing a good job of allocating the supply of goods to be distributed under the state plan, agricultural means of production elements everywhere wracked their brains to expand the supply of goods to satisfy production needs. It is reported that last year, thanks to the purchase from other provinces of large amounts of nitrogenous fertilizer, spraying devices, farm implements, plastic sheeting used in farming, and plow oxen, which were in short supply in markets, Guangdong Province's supply of needed agricultural means of production goods improved. In recent years, every jurisdiction has promoted use of and gained remarkable increases in output from potash fertilizer, and agricultural means of production elements have used every manner of means to expand its supply. Last year they supplied a total of more than 86,000 tons of it, a 1.5 fold increase over the previous year.

In order to meet changes in the system of responsibility for production in rural villages, and of more diffuse agricultural activities, in view of the supply situation, agricultural means of production elements cut back on planned distribution of varieties and expanded the scope of free choice in making purchases. For example, supply of pesticides and herbicides and spraying devices was opened up. Numerous grassroots supply and marketing cooperatives broke open and supplied for retail a substantial number of goods so farmers could buy and use them. When 23 grassroots level supply and marketing cooperatives in Wuhua County set up stalls and stands on market days to supply goods needed in farm production, they were welcomed by the peasants.

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CSO: 4007/260

TRAINING OF AGRICULTURAL CADRES, TECHNICIANS CONTINUES

Guangzhou NANFANG RIBAO in Chinese 11 Feb 81 p 1

[Article: "Guangdong Province's Province and Prefecture Two-Echelon Training in Farming Techniques Begins to Become Routine; Last Year More Than 3,500 Leading Farm Cadres and Technicians Were Trained"]

[Excerpts] Much growth occurred last year in training in farming techniques in Guangdong Province. The two echelon province and prefecture rotational training of leadership cadres in agriculture totaled 1,147 people, a 46.7 percent increase over the year before last. Agricultural technicians trained numbered 2,419 people, a 92.1 percent increase over the year before last. Last year training of rural grassroots administrative cadres and rural technical cadres at the county level was double the number of the year before last. Thirteen prefectures in the county, not including Shaoguan, Shenchuan, and Zhuhai cities, which asked adjacent prefectures to handle training for them, set up agricultural cadre schools or training classes. With the establishment of training bases, province and prefecture two echelon training has begun to become routineized, normalized, and systematized.

Training in agricultural techniques has produced greater and greater results. Following training, numerous county and commune leadership cadres better understand that science and technology are the principles underlying productivity, and they have made a preliminary study of the basic theories and fundamental knowledge required in management and the guiding of agricultural production. Their ways of thinking and leadership methods have consequently improved.

The main reason that Guangdong Province's training in agricultural techniques has been able to make great accomplishments in a short period of time is the attention given to it by CCP committees and the government at all levels, and the personal attention given it by leading comrades, as well as the assistance given in manpower, materials, and financial resources. Last year Foshan Prefecture allocated 450,000 yuan for the building of a training building by the prefecture farm cadre school. During the past 2 years, funds invested in training by the three echelons of prefecture, county, and communes within the prefecture have totaled ..34 million yuan, providing major material conditions for training work and assuring the smooth development of training work. Now 12 counties (and municipalities) in the prefecture have set up agricultural technical schools, and most communes are also operating commune training bases in the preliminary formation of a fairly complete educational network in farming techniques. In the establishment of training bases, all echelons

of the agricultural sector has given attention to realities and have depended on agricultural schools and agricultural institutes to operate classes and give tailored instruction. They have also closely watched the key link of improved quality of instruction so that training work would be done both quickly and well.

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CSO: 4007/260

SHUNDE COUNTY DISTRIBUTES AN AVERAGE 260 YUAN PER CAPITA

Guangzhou NANFANG RIBAO in Chinese 3 Feb 81 p 1

[Article by Tao Guangyuan [7118 0342 0955] and Li Erkuan [7812 1422 1401]: "Shunde County Distribution Averaged 260 Yuan Per Capita Last Year; Third Plenary Session Policies Make Economic Crop Area More Prosperous"]

[Text] The programs and policies of the Third Plenary Session [of the 11th Party Central Committee] have made peasants in economic crop growing areas more prosperous. Last year, Shunde County had increased output, increased income, increased distributions, and increased accumulations. The county's income from agriculture totaled more than 236 million yuan, a 17.5 percent increase over 1979, and production team category 1 distributions averaged more than 260 yuan per capita (exclusive of distributions alloted by production brigades), a 40 yuan increase over 1979. Following conversion and distribution, "three manys" broke out in rural villages throughout the county: building of many new houses, many weddings, and buying of many goods for the lunar new year. The broad masses of commune members were in high spirits, their thoughts were lively, and they were jubilant.

Shunde County possesses surpassing conditions for the development of a commodity economy. Historically it has been an area of diversified production, cyclically producing fish, mulberry, and sugarcane. As a result of disturbances caused by the ultraleftist line during the 10 years of turmoil, advantage could not be taken of commodity production. Since the party's Third Plenary Session, however, Shunde County has deeply criticized the leftist line and has faced facts in accordance with the needs of the state to make a rational readjustment of its production patterns for a bold development of pondfish, sugarcane, and silkworm mulberry production. In accordance with the characteristics of the economic crop area, they have adjusted general methods to local situations to promote various forms of a system of responsibility for production, particularly the vigorous promotion of contracting for specialized work in a system of responsibility for production that links calculation of remuneration to output. This has aroused the enthusiasm of the masses, thereby giving full play to the advantages Shunde County possesses. Pondfish are the major item in this county's production, and it is also the major commodity in the foreign export trade. Early last year, a cold spell froze to death 80 percent of the dace fry dealing a serious blow to pondfish production. In order to recover losses from this calamity, each

commune and brigade raised grass carp, flatheads, and bream mixed in with the raising of some African crucian carp and carp from northeastern China. As a result, a fine harvest was reaped even during a year of calamity. Last year, pondfish output for the county totaled more than 105 million jin, a slight increase over 1979, which was the highest year on record, and income from pondfish increased by 8.9 percent over 1979. As a result of provincial readjustment of policies pertaining to cane sugar, and an increase in the purchase price paid for sugarcane, the enthusiasm of cane farmers for the further development of sugarcane production was further aroused for an expansion in the area planted to sugarcane. A 70 percent increase in output over 1979 is predicted with a 52.3 percent increase in output value over 1979. Silkworm cocoons also scored increases in output. Profits of commune and brigade enterprises in the county amounted to more than 43 million yuan, for an increase of 26.5 percent.

Development of production of all kinds in Shunde County brought a tremendous increase in collective income; the level of commune member distributions went up; and contributions to the state became ever greater. Quantity of pondfish purchased by the state last year amounted to 22,587 tons, 759 tons more than the previous year, overfulfilling state purchase plans by 27 percent. Natural silk exceeded procurement quotas by 40 percent, and all other procurement quotas were also filled quite well. In making arrangements for distributions after assuring that commune members' distributions would continue to increase, each commune and brigade increased its accumulations. According to preliminary statistics, country production brigade accumulations withheld totaled more than 20 million yuan, amounting to 8.9 percent of total income, a 1.6 percent increase over 1979.

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CSO: 4007

BAIYUN HOG RAISING ENTERPRISE PROFITABLE

Guangzhou NANFANG RIBAO in Chinese 14 Feb 81 p 2

[Article by Dan Baiping [0830 2672 1627]: "Large Scale Hog Raising Enterprises Can Be Profitable Too; Baiyun Combined Agricultural, Industrial and Commercial Company's Mechanized Hog Raising Plant Made 50,000 Yuan Profit Last Year"]

[Text] Last year the Guangzhou Municipal Stage-Owned Baiyun Combined Agricultural, Industrial and Commercial Company's mechanized hog raising plant completed 3 months ahead of schedule fulfillment of its 1.2 million jin marketing quota for hogs for the year. By the end of the year, quantity of pork marketed amounted to 1.8 million jin, a 50 percent increase over the same period the year before last for a profit for the year totaling 50,000 yuan.

The Baiyun hog raising plant is a large scale hog raising enterprise on which construction began in 1978. That they were able to win profits is attributable mostly to their attention to the following three elements.

Management of the enterprise in accordance with economic laws. Early last year, the plant instituted the "five quotas and one reward" (fixed output quota, output value quota, meat to feed ratio quota, cost versus profit quota, with reward of 70 percent of excess profits). This raised the enthusiasm of the masses.

Second was scientific raising of the hogs. The pig raising plant worked with the municipal feed company to improve the formula for the food, mixing into the feed a proper proportion of needed nutrients, and using powdered hay as a substitute for green feed in fattening the hogs. As a result of changes made in the feed, the hog herds grew rapidly and the meat to feed ratio (the amount of feed consumed per jin of meat grown) dropped from the former 1:5 to 1:3.6. Total substitution of powdered hay for green feed not only saved land but also saved manpower year round, and 30,000 yuan worth of electricity.

Third was attention to all phases of management. The hog raising plant slaughtered and processed part of its excess production, selling 200,000 jin of fresh pork, cured pork, and roast pork for a profit of about 20,000 yuan. They used the man made lake in which they used to grow lettuce (and which they stopped growing after switching to the feeding of dry hay powder) for raising fish, producing more than 60,000 jin of fresh fish for a net profit of more than 10,000 yuan. Because of good all around management, created output value for the entire plant averaged 11,500 yuan per person.

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NEW BREEDING METHOD FOR RICE REVEALED

Guangzhou NANFANG RIBAO in Chinese 10 Feb 81 p 1

[Article by Li Caijin [2621 2088 6651], "Lai Laizhan's [6351 0171 1455] Research in Scion Culture Technique Succeeds For the Creation of a Genetic Breeding Method for Paddy Rice"]

[Text] Following 4 years of experimental research, Lai Laizhan, assistant researcher at the Rice Institute of Guangdong Provincial Academy of Agriculture has created a new genetic breeding technique that is vastly superior to traditional methods--rice scion liquid culturing technique. Geneticists at last month's technical appraisal conference unanimously acknowledged that this technique may be promoted for use in applicable agricultural and science teaching units throughout the country.

Sexual hybrids are one of the major ways of creating new varieties of crops. Formerly in China and abroad, hybridizing was done manually in the fields for the most part and subject to the limitations of external conditions such as weather and climate. In 1972, Lai Laizhan discovered in the course of experiments on the physiological effects of hormones on rice in its late stage that when scions (bearing one or two upper leaves) were cut from a rice plant and inserted into a culturing medium that some of the glumes were able to come into milk and form grain. In 1977, Lai Laizhan started experiments in scion hybrid medium culturing to derive a group of hybrids for the first time. The hybrid fruiting rate of seeds reached better than 90 percent, grains were plump; they sprouted well, and fertility of hybrid progeny was normal. During this same year, Lai Laizhan proposed a set of medium culturing techniques and operating sequences. The printing in ZHIWU XUEBAO [Plant Journal] of this research report aroused the intense interest of genetic breeders in the country. For the past several years, more than 100 units in more than 10 provinces and municipalities have used the medium culturing method in breeding in many ways, deriving definite results from it and generally evaluating it well. The National Conference on Exchange of Techniques in Plant Parthenogenesis held in Guangzhou last November affirmed that the culture medium technique is a new breeding technique first developed in China, which can be used not only in conventional breeding of rice, but can be also used in research in induced physico-chemical changes, distant hybridization, induced parthenogenesis, and hybrid heterosis.

Prior to 1977, no similar research reports had been seen either in China or abroad on the use of the scion culture method of propagation. After many years research, Lai Laizhan arrived at a simplified culturing medium with a scientific foundation, improved upon tools for killing stamens, and put forward a method for preventing dryness of leaves and dryness of panicles making possible normal fruiting as a scion, thereby isolating in a laboratory pollination of the hybrid to get hybrids. Both the method and the equipment are simple, the procedure convenient, and the temperature for killing of the stamen accurately stabilizied. The culturing environment may be controlled without the limitations or disturbance from the outside environment. Working conditions are improved; quantity and quality is assured; the breeding cycle is shortened; and numerous combinations may be hybridized, and a large quantity of hybrid seeds thereby derived. Wide use of this technique will play a major role in research into genetic breeding and plant physiology.

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CSO: 4007/261

RESERVING SUGARCANE CUTTINGS FOR PLANTING DISCUSSED

Guangzhou NANFANG RIBAO in Chinese 13 Feb 81 p 2

[Article: "How Can a Good Job of Reserving Sugarcane Stock Be Done Now?"]

[Text] Comrade Editor:

The area of Guangdong Province planted to sugarcane this year will be expanded to 3 million mu. Solution to the problem of reserving sugarcane stock for planting merits serious attention. It is said that Guangdong Province did not plant much sugarcane last year. In addition to the area planted to sugarcane last fall plus the area containing perennial roots, the province will need to plant nearly 2 million mu more this spring, which is almost again as much as last spring. How can sufficient cane cuttings be held back for this purpose while still assuring that refineries receive sufficient raw materials?

First is appropriate arrangements for reserving young sugarcane plants. Each sugarcane growing area must work out a plan for holding back cuttings based on this year's new acreage. In places where large expansion of acreage is to occur and where supplies of cane stock are tight, special attention must be given to reserving early cut, early maturing varieties. In order to avoid infection with pineapple disease while in storage, some of the cuttings already on hand my be planted by places that customarily grow winter sugarcane or may be intercropped along vegetable plots. The remainder should be sprouted both for a saving in quantity of cuttings that will have to be taken for spring transplanting, and for increased output. In communes and brigades where acreage will not be increased greatly, taking of cuttings may be delayed until spring.

Second is conservation in the use of cuttings. Guangdong Province has had quite a bit of experience over the last few years in how to save on cuttings, principally the following:

(1) Using the right amount of cuttings while increasing the sprouting rate. Careful selection of cane cuttings of medium height or higher that are uniformly thick in diameter and have healthy sprouts on them, planting between 2800 and 3000 double-budded cuttings per mu. An additional 100 to 200 cuttings can be sprouted and kept in research to fill in places where canes fail to come up.

(2) Winter sprouting of cuttings using plastic sheeting. After being dipped in a limewash and disinfected with insecticide, the cuttings reserved for winter planting can be lined up close together in the seedling beds and covered with mud fertilizer, watered down, and covered with plastic sheeting for a very great increase in the sprouting rate and for a saving in cuttings of about 200 to 300 jin per mu.

(3) Full use of cane tips and cane shoots. When all perennial roots are dug up in a change of canefields, the large quantity of cane tips and shoots that are dug up should be separated and cut into sections for rooting. Plastic sheeting may be used to propagate cane sprouts for use as stock for growing cane. A single mu of cane tips can solve the problem of stock for three or four mu.

(4) Use of a slice containing a bud or use of a cutting with a single bud to propagate a shoot. Guzhen Commune in Zhongshan County and Nanya Commune in Nanhai County used slices containing a bud to propagate shoots. They required only 200 to 300 jin per mu of such cuttings for a saving in cuttings of more than 1300 jin per mu while getting yields from a large acreage of between 8 and 9 tons per mu. Additionally, in recent years, Shunde and Taishan counties have begun use of cuttings with single buds to grow shoots for about a 50 percent saving in cuttings. But requirements for these two techniques are fairly high, and meticulous care must be taken especially in maintaining proper temperature, preventing disease, and supplying fertilizer.

(5) Retention of more perennial roots. Selection of varieties from the previous year that have strong perenniality, numerous canes, and few diseases or insect infestations. After harvesting, the soil should be tilled and the soil between plants loosened, and canes should be sprouted and held in reserve to fill in places where plants do not come up. In this way, output will be very high.

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CSO: 4007/261

POND FISH OUTPUT CALLED HIGHEST IN HISTORY

Guangzhou NANFANG RIBAO in Chinese 12 Feb 81 p 1

[Article: "Last Year Guangdong Province's Pond Fish Output Created Highest Record in Histroy; Reliance on Government Policies and Science to Triumph Over Natural Disasters"]

[Text] Despite serious disaster, Guangdong Province still had a bumper output of pond fish last year. According to preliminary statistics currently available, last year's pond fish output for the province totaled more than 220,000 tons, a 4.8 percent increase over the year before last, which had the highest output on record.

During the past 2 years, while readjusting the internal composition of agriculture agriculture, the broad masses of rural communes and brigades in Guangdong Province have given attention to making the most of advantages for fresh water fish breeding, transforming water surfaces suitable for fisheries, and building fish ponds. During last spring and the previous winter alone, more than 40,000 mu of fishponds were enlarged. However, in early spring last year, Guangdong Province was struck with continuously rainy and cold weather, which froze to death large numbers of dace and African crucian carp. To meet this situation, party and government units everywhere made a real strengthening of leadership for rapid organization of forces to combat the calamity. By way of further arousing the initiative of the masses, each jurisdiction promoted a general system of responsibility linked to production and involving the fixing or contracting of quotas, and they continued the policy whereby commodity fish base communes and brigades could handle commodity fish as they saw fit once they had fulfilled quotas for sales to the state. There would also be no requisition purchases by the state of fish raised by communes and brigades on their own water surfaces, and award sales of grain for any such purchases made were increased from the former 50 jin to 100 jin per dan of fish. Fish prices paid by the state were also raised a general 30 percent. Furthermore, a temporary policy of a 10 percent reduction in requisition purchases of fish was adopted. At the same time each jurisdiction adopted advanced methods for thinning out the fat, mature dace in order to increase the quantity of dace bred, and they also boldly readjusted the composition of varieties bred, strengthened care of pond fish, and fattened them ahead of time, thereby gaining increased output of grass carp, flatheads, and silver carp to make up the loss through disaster of the dace. Foshan Prefecture, which was quite seriously stricken with disaster last year had a pond fish output of 2.49 million dan, a 1.6 percent increase over the year before last, which had the highest output on record.

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CSO: 4007

BRIEFS

COMMUNE, BRIGADE-RUN ENTERPRISE INCOME--Rural commune and brigade enterprises in Guangdong have developed and strengthened the collective economy through active development of the processing and assembly of goods brought in from abroad. Incomplete statistics show that last year the province's commune and brigade-run enterprises had earnings of 150 million yuan in fees for the processing of goods from abroad, a fourfold increase over 1979, and about 80 percent of income from processing in the province. Many parts of Guangdong Province are adjacent to Hong Kong and Macao and labor is abundant. Various places have used these circumstances to operate labor-intensive enterprises, actively developing businesses in processing and assembling goods brought in from abroad. They have introduced advanced technology and equipment to process clothing, knit goods, leather articles, hardware, children's toys, high quality furniture, handicrafts, and small appliances for foreign traders. Not only has their work been greatly welcomed by foreign traders, but they have also increased commune and brigade earnings. Last year Zhongshan County signed agreements with foreign traders for 335 items, and introduced 2,146 pieces of equipment valued at the equivalent of 1.72 million yuan. Their earnings for the year from processing, plus preferential subsidies provided by the state, totaled 17.1 million yuan, a 5.3 fold increase over the previous year. Two production teams in the Xinlu Brigade of Shaqi Commune in the same county jointly operated a machine stitching composite handicrafts plant, which accepted goods from Hong Kong and Macao for processing. Last year it had earnings of 180,000 yuan from processing, and commune member average distributions increased from 150 yuan in 1979 to 310 yuan. The masses said happily: "Two teams ran a plant and the whole village prospered." Twenty-four communes in Panyu County operated a clothing plant, processing clothing for foreign traders. Last years earnings from processing increased 1.1 fold over 1979. [Text] [Guangzhou NANFANG RIBAO in Chinese 10 Feb 81 p 1] 9432

DRIED RUBBER OUTPUT--Last year the state rubber farms subordinate to the Provincial Bureau of Farms and Land Reclamation triumphed over serious natural disasters to win another bumper output of rubber. Total reclamation area output of dry rubber was 80,832 tons for an overfulfillment of production plans for the whole year, and for an overfulfillment of profit plans following readjustment. This was another bumper year that followed 1979's greatest increase in output on record. Last year after eight months of drought in China's major rubber producing area, Hainan Island, no sooner had the new branches and tender buds wilted and died when a cold current attacked, and powdery mildew spread through most of the rubber plantations,

so that the rubber tapping period was delayed for more than a month longer than normal. During August and September, damage resulted from a grade 7 powerful typhoon, which snapped branches from numerous highly productive trees, seriously impairing completion of rubber output quotas for the full year. Faced with these situations, farms in the reclamation area took urgent measures to intensify rubber management, promptly restoring the vitality of damaged rubber trees to put them back into regular production. At the same time, each farm also launched a mass technical training campaign for a general improvement in the rubber tapping techniques of rubber workers. Testing showed a six percent increase over 1979 in the number of first and second grade rubber tappers. As a result of these measures, the rubber output situation for the entire reclamation area took a turn for the better, and daily output of dry rubber for the first half of the year was 347 tons, a 35 ton increase over the same period two years ago. Total output of dry rubber substantially caught up with that of the same period in 1979, which was the highest year of output on record. By the end of December last year, the entire bureau had not only fulfilled production quotas for the whole year, but had overfulfilled dry rubber output by more than 2800 tons. [Text] [Guangzhou NANFANG RIBAO in Chinese 13 Feb 81 p 2] 9432

CSO: 4007/261

PROTECTING HEBEI WHEAT THROUGH 15-DAY CRITICAL PERIOD

Shijiazhuang HEBEI RIBAO in Chinese 27 Mar 81 p 1

[Article by Commentator: "Fight Fiercely for 15 Days in a Critical Assault to Wrest a Wheat Harvest"]

[Text] The vernal equinox comes on 21 March and 5 April marks Qingming. The period around Qingming is a crucial one for the greening up and jointing of wheat following dormancy. During the next 15 days, adequate watering of the wheat, and follow-up application of fertilizer lays a powerful foundation for healthy and strong greening up and jointing of the wheat during the days of balmy spring breezes, for promoting effective tillering and for building large panicles as the key to winning a bumper wheat harvest this year. Comrades engaged in rural work throughout the province, as well as comrades in industry and commerce who support agriculture, must exert maximum effort during this 15 day period to work with the broad masses of commune members in fighting this battle of watering, fertilizing, and intensifying care of the wheat.

First is a need to strengthen guidance, to put into operating condition all damaged wells that can be used, to repair and refit pumps and conduits, to have a system of responsibility for looking after machine-powered wells, and a system of responsibility for channeling water into the fields. At every mechanized well and every source of water, work forces should be led by cadres so that the machines are never stopped so long as there is water, and so irrigation goes on for 24 hours a day. Contracting must be earnestly done with special people, and cadres must squat at well sides for watering night and day.

Second, all matters that are not urgent, including meetings that can be delayed, should be delayed. Cadres sent to the countryside should not engage in sightseeing but rather personally guard the wells, make sure all projects for the channeling of water are in good condition, and conduct ideological work in their locales, do organizational work, and assure completion of watering tasks.

Third, agricultural banks should adapt general methods to specific situations in vigorous organization of loan issuance tasks. Commercial units as well as industrial units who have signed contracts with peasants for the purchase of raw materials, should promptly release downpayments for advance purchases, and expenditures to combat drought should be quickly paid. These sums should not be distributed in an egalitarian way, but should be actually used in places with water resources where

funds are lacking. They should be under the control of cadres combating drought, and the funds should be used in a centralized and planned way. The release of these funds within the next 15 days is extraordinarily important for winning the summer harvest and a bumper harvest in agriculture for the year as a whole. Province, prefecture, city, and county CCP committee economic committees and finance and trade departments must conscientiously accomplish these matters.

Fourth, spring irrigation of fields that have not been cultivated since the last harvest, and work preparatory to planting of cotton must also be done during this 15 day period. Time is pressing and there are numerous things to be done; males and females, the old and the young must be mobilized to take advantage of every second to get good results.

Fifth, general methods have to be adapted to specific circumstances; key matters must be taken in hand; and forces must be concentrated in a war of annihilation. Xingtai Prefecture has done a good job in this regard. Here there are 5,178,000 mu of wheat of which 3.71 million mu have to be irrigated. If water is maintained, fertilizer is increased, and care is good for this 3.71 million mu of wheat, yields of 400 jin per mu can be reaped. Thus, 1.484 billion jin of wheat can be had. In addition, they have another more than 2 million mu of wheat, some of which is virtually unirrigated, and some of which requires irrigation once or twice. Supposing an average 80 jin per mu, more than 160 million jin can be had. Thus, total output obtainable, is more than 1.6 billion jin of wheat. Looked at in these terms, if a bumper harvest is to be won this summer under the present serious drought conditions, there are two ways of going about it. One is egalitarian use of forces, using available water equally and sprinkling available fertilizer around, resulting in an average decline in per unit yields and an inevitable reduction in total output. The other way is to concentrate forces for a war of annihilation, launching an attack at the key points of adequate water and adequate fertilizer for the wheatfields to win high output. Obviously the latter way is the correct one, and the one that should be used.

But is that to say that the wheat in places lacking adequate water or where there is just no water available for irrigation are to be forsaken? Not at all. In such places, more cultivation and other work in caring for the wheat must be done to preserve moisture in an effort to get a little more output. Naturally, a small number of wheat seedlings have already died for serious lack of water, and they can only be plowed under and preparations made for planting the autumn grain.

Preparatory work for the growing of cotton and autumn grain crops also requires that general methods be adapted to specific situations in active preparation. In places where water resources suffice, constant day and night spring irrigation of fields that have not yet been plowed should be done, and manure should be spread in preparation for planting. In places where water does not suffice or where there are no water resources, vigorous work should be done to prepare anzitian [100A 1311 3944] and preparations made to carry water for dibbling planting.

Sixth, in order to do a good job of spring planting and combat drought to assure the summer harvest, ideological education work must be done repeatedly among the broad masses of cadres and the masses, with timely summaries and exchanges of experiences that encourage cadre and commune member confidence in winning a bumper summer harvest. Those elements who purposely disturb the social order or intentionally cause damage will be strictly dealt with in accordance with law.

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CSO: 4007/346

EMERGENCY IRRIGATION IN JIAOHE WHEAT FIELDS CARRIED OUT

Shijiazhuang HEBEI RIBAO in Chinese 31 Mar 81 p 1

[Article by Ke Qin [0344 0530], Tong Yuan [0681 0337], and Guang Rong [1684 2837]: "Jiaohe Rushes Life-Giving Watering to Wheatfields With Seriously Depleted Moisture; Checks on Moisture Conditions to Prescribe Measures in Combating the Drought Demon"]

[Text] The Jiaohe County CCP Committee and the County Revolutionary Committee have organized cadres and commune members throughout the county to rush life-giving water as a matter of priority to 190,000 mu of fields suffering from severe moisture lack where dead plants have been found. As of 2 February, 85,000 mu had been watered, and they are determined to water the entire acreage once by the end of the month.

During the early part of this month, eight members of the County CCP Committee and County Revolutionary Committee, including the secretaries and deputy secretaries, chairmen, and members of the standing committees led a group of personnel concerned on an inspection of wheatfields in all areas. They learned that except for 230,000 mu of the county's total 420,000 mu of wheat fields, which were watered at the time of sowing and having since been watered by melting ice, and in which the moisture and seedling conditions are relatively good and where further watering may be delayed, on the remaining 80,000 mu, which was quickly sown while there was sufficient moisture in the soil and which has received no water from melting ice, the moisture content stands at only four or five percent, and the rate of dead seedlings stands at more than 50 percent. On 110,000 mu that were watered at the time of seeding but received no watering from melting ice, the water content stands at between 10 and 13 percent, and the average rate of seedling deaths is around 30 percent. Therefore, these 190,000 mu of wheatfields urgently require watering to replenish their moisture. Additionally, the group discovered and summarized the experiences of some communes and brigades in early watering to increase moisture and preserve the life of the seedlings. The County CCP Committee and the County Revolutionary Committee decided to act at once to give life-giving water to these 190,000 mu of drought-stricken wheat. In order to rush the life-giving watering, the County CCP Committee and the County Revolutionary Committee leadership comrades held separate meetings of commune and brigade cadres to unify thinking on every echelon. More than 600 cadres from throughout the county were assigned to key communes and brigades under the leadership of leadership comrades in the County CCP Committee and the County Revolutionary Committee and responsible comrades in county bureaus and communes to assist commune and brigade cadres gain an understanding of the drought situation and the seedling situation, and to make overall arrangements

for utilization of existing water resources to make an assault with rush watering. The Baizhuan Production Brigade of the Wujunzhai Commune sank 30 wells for its 300 mu of parched wheatfields, each well capable of watering one mu per day, for good results. The County CCP Committee and the County Revolutionary Committee promoted advanced experiences and spurred on the countywide rush watering of the wheat.

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ANTI-DROUGHT IRRIGATION IN NINGJIN UNDERWAY

Shijiazhuang HEBEI RIBAO in Chinese 31 Mar 81 p 1

[Article by Wu Baocun [0702 0202 1317], Liu Xiuli [0491 4423 4409] and Mi Baoguang [4717 0202 1684]: "Ningjin Waters All of its Wheat Before Qingming [5 April] to Green it Up Following Dormancy; Goes Deep into Realities and Gives Tailored Guidance to Solve Problems"]

[Text] In watering the wheat to combat drought, the Ningjin County CCP Committee and both leaders and members of the County Revolutionary Committee have gone deep into realities, have investigated and studied, have distinguished different circumstances, adapted general methods to specific situations, and prescribed remedies in accordance with maladies to solve real problems in production to hasten the pace of watering of the wheat. As of 28 March, 420,000 mu of the county's 700,000 mu of wheat had been watered, and it is anticipated that before Qingming the entire crop will have been watered to green it up following dormancy.

When watering of the wheat to combat drought first began, the progress of watering was slow in every commune and brigade. In order to clarify the situation and find where the crux of problems lay, the County CCP Committee and 17 members of the standing committee and the deputy chairman of the County Revolutionary Committee took in hand the five combat zones in the county, transferring 67 department and bureau level cadres and 914 general cadres (an average of three persons per production brigade) to plunge into the front line of combat against drought through the watering of wheat in order to determine the situation and to examine problems. At the 420,000 mu of wheat fields in the southwestern Pianjing irrigation district, the water conservancy situation was good, and machines and power equipment were available, but both cadres and the masses maintained a blindly optimistic feeling. Many of the communes and brigades would water the fields during the day but stop at night. Zeroing in on this situation, the secretary of the County CCP Committee, Liu Ronghui [0419 2837 1920] probed into the Beihezhuang Commune to help them make a realistic accounting in order to bolster the sense of urgency among the cadres and masses for watering the wheat to combat drought. All their machinery and power equipment was turned on in a day and night assault of watering, and by 26 March the first watering had been completed, with some of the brigades having made a partial second watering as well. At Pianqu irrigation district in the northeast, water resources have declined this year, yet no decline has occurred in the area of wheat requiring watering. In order that the wheat would be given a first

watering promptly, county and commune cadres aroused the masses both to stop leaks in field ditches and to change from flood irrigation to conservation of water use, and to start up available pumping machines, using machine-operated wells to increase the supply of water, so that water resources that had been able to water only 220,000 mu could be made to water 260,000 mu, substantially satisfying needs.

In order to combat drought further and water the wheat, this county also stirred commercial, supply and marketing, and industrial and transportation elements to do all they can to lend support. The farm machine company organized more than 20 people to help the agricultural service corps to transport machines and spare parts into the countryside, and it has set up 41 farms machine supply stations, providing 20,000 items of spare parts and 415 draining and irrigating machines to communes and brigades. Industrial units have acted quickly for timely rush repairs of machines and implements to combat drought. They have renovated 3500 pieces of machinery and equipment of various kinds. Supply and marketing units and chemical fertilizer plants have sent specialists to communes and brigades to sell chemical fertilizer and have used the sales method of small profits on large volume, dropping the price of ammonium carbonate from 175 yuan to 150 yuan per ton. Using motor vehicles to transport the fertilizer to the front line of combat against drought, they have already delivered more than 10,000 tons.

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SCIENTIFIC USE, CONSERVATION OF WATER STRESSED

Shijiazhuang HEBEI RIBAO in Chinese 26 Mar 81 p 1

[Article by Liu Yun [0491 5089] and Zhu Debao [3796 1795 0202]: "Need For Serious Attention to Scientific Use of Water and Conservation of Water During Drought"]

[Text] Editorial Department:

Recently we visited rural villages where we observed that the extremely severe drought is a most prominent current problem. According to statistics from Shijiazhuang Prefecture authorities concerned, only 470 million cubic meters of water remain in the 11 large and medium size reservoirs in the prefecture, less than half the amount during the same period last year, and the equivalent of one-third the amount for the same period in ordinary years. The ground water table has rapidly dropped, and at the center of the funnel area, the water table has dropped to 22 meters deep, exceeding the effective water lifting capacity of centrifugal pumps.

At the 80,000 power driven wells used in agriculture throughout the prefecture, half pump only water enough to fill half the diameter of the pipes or less than half the diameter of the pipes. Yet in the midst of drought, the spectacle of water waste is fairly universal because some communes and brigades pay no attention to scientific use of water or conservation of the use of water. Some of them have not made an effort to level the ground to remove dividers between rectangular beds, and they use flood irrigation to water the fields, using as much as more than 100 cubic meters of water per mu. Some water channels and conduits are not in good repair. They are neither resistant to seepage nor the steady leakage of running water. The effective utilization rate for water is only 70 percent, or as low as 50 percent. In still other communes and brigades where condition of water conservancy is relatively good, even as the drought gets worse, they blindly pursue more watering and heavier watering even requiring that the "machines never stop, the top is never turned off, and the surface of the soil is never dry." Once wheat has been watered, there should be hoeing to preserve moisture and restrain growth of seedlings for root development with continuous watering resulting.

The aforestated situation shows that in the struggle to combat drought, attention must be given both to a broad opening of water sources accompanied by scientific use of water and conservation of water so that limited water is more effective in irrigation.

We also discovered that numerous communes and brigades have thought up numerous good ways in this regard. One is leveling of the soil, turning large rectangular beds into small rectangular beds. Last year, a comparative monitoring of irrigation water was undertaken on the Datong irrigation channel in Pinshan County. For fields having 15 rectangular beds, between 35 and 40 cubic meters per mu were used, and for fields having 8 rectangular beds, between 50 and 55 cubic meters per mu were used. Use of water for flood irrigation required between 100 and 113 cubic meters per mu. This year, numerous brigades and communes using irrigation ditches have changed their flatland planting beds to about 10 beds per mu, averaging 50 cubic meters of water for irrigation. The amount of water used in previous years to irrigate a mu, can now be used to irrigate as much as two mu. Second, they have done a good job in preventing seepage and leaks from water channels and conduits, reducing the loss of water. After equipping its water ditches so they would not leak, the Ciyou irrigation ditches in Lingshou County carried a volume of flow daily that increased from the pre-repair figure of 500 mu to 1,290 mu. Third, they have made a point of irrigating at the right time and with the right amount of water at key periods for crops. During the past 2 years, Zaocheng County has conducted experiments in producing high output of wheat while conserving use of water. Based on the laws governing the growth of wheat, they have delineated four stages for water consumption, and on the basis of different hydrological and meteorological conditions from one year to another, and different seedling and moisture conditions, they have determined the times for irrigation and the quantities of water to be used. The experimental fields were irrigated once less than the open fields for a saving of more than 50 cubic meters of water per mu with no impairment to wheat output, and a clear increase in output from some. Fourth, they have increased advanced water conservancy equipment to improve ability to conserve water. Shanqu County in Shijiazhuang Prefecture has more than 150 small spray irrigation machines. A single irrigation period using these sprayers requires an average of only 20 cubic meters of water per mu. Fifth, they actively hoe and cultivate to conserve moisture, reducing the loss of moisture through evaporation. Sixth is their good system of responsibility for irrigation and their contract system of "four quotas and one award" by which there is a quota of personnel, assignment quotas, a quota amount of water, and a quota amount of time with commendations and rewards for saving water.

Though the drought is serious now; nevertheless, if all echelons of leadership as well as rural cadres and commune members will give serious attention to both active development of new water sources and all manner of means of conserving the flow, so that a limited amount of water will provide maximum benefits in irrigation, victory will be won over the spring drought.

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BRIEFS

ELECTRIC POWER CUTS TO AID DROUGHT AREAS--During March, all echelons of electric power units in Hebei Province have taken action to limit or cease supply of electricity to industrial plants and mines and for the manufacture of products that consume large amounts of electricity. They have also required that commune and brigade enterprises using electricity give way to agriculture during the period of combat against drought. Electric power units have also assigned special people to help large consumers of electric power work out arrangements on the number of production shifts and the start up and stopping of major equipment. As of yesterday, 20 million kilowatt hours of electricity was transferred to the support of spring irrigation to combat drought from 66 plants and mines in Handan, Xingtai, Shijiazhuang, Hengshui, and Canzhou prefectures. [Text] [Shijiazhuang HEBEI RIBAO in Chinese 30 Mar 81 p 1] 9432

DROUGHT AREA FARM MACHINERY SHIPMENTS--The broad masses of cadres and employees in the farm machine sector of Hebei Province have conscientiously changed their working styles to meet the crisis in agriculture, placing themselves squarely in combat against drought to protect the summer harvest and protect spring sowing by doing a good job in farm machine supply and service work. As of the end of February, more than 11,000 powered machines for draining and irrigation, more than 13,000 water pumps of various kinds, more than 12 million yuan worth of spare parts for internal combustion engines, as well as more than 12,000 lengths of plastic pipes, and more than 100,000 square meters of conveyer belts urgently needed to combat drought had been sent to rural communes and production brigades. Throughout the province, repairs have been completed on more than 40,000 tractors, more than 110,000 diesel engines, and more than 46,000 tractor-drawn farm implements. At the present time, more than 100,000 tractors have been committed to combat drought throughout the province, and more than 8 million mu of land is being irrigated in the fight against drought and for spring planting. [Text] [Shijiazhuang HEBEI RIBAO in Chinese 26 Mar 81 p 1] 9432

SPRING RAINS IN DROUGHT STRICKEN AREAS--As a result of a low pressure trough at high altitude, light to moderate rain fell in Hebei Province from the afternoon of 23 March until 8 o'clock yesterday morning. This rain brought the counties of Tangshan Prefecture an average of slightly more than 10 millimeters, of which 24 millimeters fell in Luannan County, and 23 meters fell in Changli, and Funing counties. Between 4 and 9 millimeters fell in Handan, Xingtai, Baoding, Hengshui, and Cangzhou prefectures. Other prefectures received less than 4 millimeters. The

drought situation in Hebei Province is currently serious, and though some places received a fairly large rainfall on this occasion, it was not enough to relieve the drought. It is hoped that units concerned will continue to give extreme care to the wheatfields and to work to combat the drought. [Text] [Shijiazhuang HEBEI RIBAO in Chinese 25 Mar 81 p 1] 9432

CSO: 4007/346

BRIEFS

FARMLAND CONSTRUCTION--Since the start of last winter, over 2.8 million persons were organized in Hubei to take part in farmland capital construction. According to incomplete statistics, 36,300 projects of all sizes were started, and by the end of last January, 17,500 of these projects, involving 150 million cubic meters of earth and rock work, were completed. They included the leveling of land on hilly areas to restore more than 137,000 mu of farmland and the annual repair of dikes along the Han River. [Wuhan HUBEI RIBAO in Chinese 18 Feb 81 p 1]

FISHERY BASE ESTABLISHED--In the past 2 years, over 64,000 mu of facilities for raising commercial fresh-water fish were established and put in operation in Hubei. By mid-January of this year, the task of providing Beijing with 4.1 million jin of fish was fulfilled. Hubei is one of the 10 commercial fresh-water fish bases set up in China. [Wuhan HUBEI RIBAO in Chinese 6 Feb 81 p 1]

COMMUNE-RUN ENTERPRISES--The total value of goods produced by commune- and brigade-run enterprises in Hubei in 1980 was 2.3 billion yuan, a 10.5 percent increase over 1979, while the productivity of full-time workers of these enterprises was up by 20 percent. [Wuhan HUBEI RIBAO in Chinese 6 Feb 81 p 1]

CSO: 4007

BRIEFS

SMALL IRRIGATION PROJECTS--Small irrigation projects, such as ditches in wheat fields, undertaken in Jiangsu since the beginning of this winter helped expand and improve the irrigated area by 180,000 mu and 1.2 million mu respectively, while increasing and enhancing the drainage area by 230,000 mu and 1.2 million mu respectively. [Nanjing XINHUA RIBAO in Chinese 21 Jan 81 p 2]

ETHREL USED ON COTTON--In 1980, ethrel was successfully used on 1.29 million mu (or one-seventh) of Jiangsu's cotton crops to promote ripening and increase yield by 5-15 percent. [Nanjing XINHUA RIBAO in Chinese 2 Mar 81 p 2]

CSO: 4007

PRODUCTION COSTS, PROFITS OF RICE REPORTED

Beijing ZHONGGUO NONGKEN [CHINESE AGRICULTURAL RECLAMATION] in Chinese No 7, 24 Jul 80 pp 20-21

[Article by Zhang Wenchong [1728 2429 0112], Wang Jingrong [3769 2529 2837], and Ban Yongfu [3803 3057 1381], "Why Do Economic Benefits Greatly Differ? An Investigation of Rice Costs for Two Production Teams"]

[Text] The Xiaozhuangzi No 4 Production Team at the Rongxing State Farm and the Nianfang No 6 Production Team of the Gaojia State Farm, both of which are part of the Dawa Agriculture-Industry-Commerce Integrated Company of Yingkou, Liaoning Province are engaged in the production of rice. Natural conditions are essentially the same for both, and there is little difference in the scale of their farming, yet as a result of the great gap between their costs, their economic effectiveness differs greatly.

A comparison of the two production teams' 1979 rice production costs and results of farming operations are as follows:

Item	Units	Nianfang No 6 Team, Gaojia State Farm	Xiaozhuangzi No 4 Team, Rongxing State Farm	Percent Increase or Decrease for No 6 Team, as Compared with No 4 Team
Acreage sown	Mu	578	665	-15.1
Per mu yields	Shijin	876	1,025	-17.0
Per mu costs	Yuan	150.15	132.04	+13.7
Costs per shijin	Yuan	0.167	0.125	+33.6
Per mu income	Yuan	173.34	206.85	-19.3
Per mu profits	Yuan	23.19	74.71	-222.0

Analysis of the reasons why one of these teams has large profit while the other has slight profit and why there is more than a twofold difference in average yields per mu shows that apart from the bearing of the size of per unit yields, the main reason lies in the very great difference in production costs as is demonstrated in the several following issues:

1. Differences in the Scientific Use of Seeds

Last year Nianfang No 6 Production Team made no strict tests of seed sprouting ability, and did not appraise and decide seed use standards on the basis of sprouting rate and per thousand weight of grains, so it used an average of more than double the amount of seeds per mu as the other team, paying 2.18 yuan per mu for the overuse of seeds. Xiaozhuangzi No 4 Team, on the other hand, paid 1.95 yuan per mu for seeds, or only one-third the average amount per mu paid by Nianfang No 6 Team. The main reason Xiaozhuangzi No 4 Team saved on seed expenses was its emphasis on the scientific use of seeds. It meticulously tested seed sprouting, setting the quantity of seeds to be sown on the basis of the per thousand weight of the seeds, the sprouting rate, and the number of assured seedlings per mu, using its seeds in accordance with technical standards.

2. Differences in the Use of Chemical Fertilizer and Pesticides

Nianfang No 6 Team concentrated only on the spread of fertilizer to increase output; it gave no attention to analysis and selection of the amount of fertilizer needed to increase output or to low-cost scientific application of fertilizer. Applications of chemical fertilizer averaged 115.8 jin per mu, and use of pesticides amounted to 2.5 jin per mu. The 33.46 yuan per mu cost of these two items amounted to 22 percent of total costs per mu. Xiaozhuangzi No 4 Team emphasized scientific application of fertilizer. As the result of analysis and comparison of increased output and profits from the application of fertilizer for many years, they chose the quantity of fertilizer that gave optimum economic results, applying an average 84.4 jin per mu of chemical fertilizer and using 0.6 jin of fertilizer. The 18.89 yuan per mu total cost of these two items was only 56.4 percent the cost for fertilizer and pesticides of the Nianfang No 6 Team. Results were as follows. Though Xiaozhuangzi No 4 Team spread 37 percent less chemical fertilizer per mu than the Nianfang No 6 Team, its yields exceeded 1,000 jin per mu, for a grain output of 147 jin more per mu, which greatly increased profits.

3 Differences in Allocations and Use of Machinery and Animal Power

Great differences also existed in machinery expenses as part of production costs for the two teams. Nianfang's area had two chain style tractors, each of which was responsible for tilling 1,261 mu, and it also had one motorized hand tiller. In the principal operations of plowing, harrowing and compacting the soil, this team worked the equivalent of 2,570 standard mu at a cost of 2.0[illegible] yuan per mu. In addition, it shared machinery losses of 1,974 yuan, and this plus a 2,600 yuan expense for the hand tiller brought total costs for machine work to 9,427 yuan, or 16.31 yuan per mu tilled by machines, which was 10.6 percent of total costs per mu. Xiaozhuangzi's area also had two chain-type tractors, but each of them was responsible for tilling 2,700 mu or a 1.1 fold greater amount than in Nianfang's area. They conscientiously intensified machinery management, set up a system of economic responsibility, and instituted accounting for individual machines, s[illegible] costs of machine tilling amounted to 1.39 yuan per standard mu (this cost is also fairly high--the author), or 38 percent lower than for the Nianfang area. Even including the hand tiller expenses, machine tilling amounted to only 6.18 yuan per mu, or 62 percent less than the machine tilling costs per mu in the Nianfang N[illegible] 6 Team.

Furthermore, Nianfang No 6 Team had 12 large cattle and some barnyard animals for which grain and hay was bought at a high price to feed them each year at a cost for animal power of 9.52 yuan per mu. Xiaozhuangzi No 4 Team fed only six large cattle for which it provided all the feed itself. Cost of animal power was only 2.24 yuan per mu, or two-thirds less than for Nianfang No 6 Team. This also had a great effect on costs.

4. Differences in Management and Use of Materials

Other direct expenses among the costs of the two teams included 25.24 yuan for Nianfang No 6 Team and only 7.32 yuan for Xiaozhuangzi No 4 Team, the former being 1.5 times that of the latter, largely because of great differences in use and management of materials. Most of the plastic sheeting used by Nianfang No 6 Team was lost or damaged and only 2.5 tons of the 19.5 tons of reeds used as storm fences were recovered, for a recovery rate of only 30 percent. Xiaozhuangzi No 4 Team meticulously figured use of all materials and strictly controlled them. Losses were slight. Plastic sheeting and storm fence reeds were promptly retrieved following use. Ninety sheets of the plastic sheeting for which money was spent in 1972 are still being recovered.

In addition to comparison of costs for the major foregoing items, a situation of serious waste of water existed in the two teams. Nianfang No 6 team shared use of water with several score production units, not knowing just how much water it used, but paying at year's end a pro-rated portion of total amount of water supplied to all units. Xiaozhuangzi No 4 Team only roughly calculated water use on the basis of capacity of a branch ditch. Calculations were not accurate, so adjustments were made at year's end. Since much water was wasted, the water expenses for these two teams ran as high as 5.17 yuan and 7.96 yuan. In this respect, a lot of potential exists for reduction of costs by these two teams.

Production costs are a multiple criterion for measuring the economic effectiveness of an enterprise. They reflect in a concentrated way the level of administration and management of an enterprise. Intensification of management over costs is a major ingredient in raising the level of management of an enterprise. The analysis and comparison of the cost picture for the aforementioned two teams are fairly universally representative. From these comparisons may be seen that a great potential exists for lowering costs in the Nianfang No 6 Team, and even in Xiaozhuangzi No 4 Team with its low costs and high profits, potential for lowering costs is also very great. Therefore, we must strengthen our leadership, arouse the masses and strengthen the rules and regulations so that we can raise cost management, which is an integral part of enterprise management, to a new level, thereby deriving greater economic effectiveness from our economic activities.

9432
CSO: 4007/263

BRIEFS

SILKWORM COCOON PRODUCTION--Liaoning had a record harvest of tussah silkworm cocoons in 1980 with a total output of 1.03 million dan, an increase of 20.47 percent over the bumper harvest year of 1979. Liaoning's output accounted for 80 percent of the national output. [Shenyang LIAONING RIBAO in Chinese 1 Jan 81 p 2]

GRAIN, BEAN PRODUCTION INCREASED--By 1980 the total grain and bean output in Liaoning had increased to more than 24 billion jin from 8 billion jin in 1949, while the average per-mu yield had raised from 126 jin in 1949 to 505 jin in 1979. [Shenyang LIAONING RIBAO in Chinese 5 Mar 81 p 2]

CSO: 4007

BRIEFS

AGRICULTURAL LOANS GRANTED--During the month of January 1981, and in support of spring farming, agricultural banks and credit cooperatives in Shandong granted more than 260 million yuan in agricultural loans, an increase of 130 million yuan over the same month of 1980. [Jinan DAZHONG RIBAO in Chinese 2 Mar 81 p 1]

RECORD BEETSUGAR OUTPUT--Between mid-October and the end of 1980, the 15 beetsugar mills in Shandong produced a total of 15,400 tons of beetsugar, overfulfilling the annual plan by 54.4 percent, and an increase of 59.6 percent over the same period of 1979. The total area planted to sugar beets in 1980 was 220,000 mu, or 52.4 percent more than in 1979. [Jinan SHANDONG RIBAO in Chinese 11 Jan 81 p 1]

PEASANTS' INCOME RAISED--In 1979, there were only 11 production brigades in Yantai Prefecture of Shandong with an average per capita distributed income of more than 300 yuan. In 1980, this number of brigades went up to 294. Of these, 26 had an average per capital distributed income of more than 400 yuan, and 6, of more than 500 yuan. [Jinan DAZHONG RIBAO in Chinese 15 Feb 81 p 1]

CSO: 4007

BRIEFS

SEVERE DROUGHT REPORTED--Severe drought is currently threatening the normal growth of wheat and is detrimental to spring sowing in Shanxi. Since the conclusion of wheat sowing in mid-October last year, there had been no heavy rain or snow in this province. The length of the dry spell is "seldom seen" since the founding of New China. In many areas, the water ponds and wells are now dry, the river flow has been reduced, and the water content of the soil of most plowed land is below 10 percent. With the exception of some 3.3 million mu of wheat fields that were watered during the winter, all of the province's 50 million mu of wheat fields and spring sown land are hit by the drought. According to the forecast of the weather department, relatively high temperatures and light rainfall are expected during the first 5 months of this year in Shanxi. [Taiyuan SHANXI RIBAO in Chinese 13 Feb 81 p 1]

TOBACCO OUTPUT INCREASE--Due to the interference of the leftist line, tobacco leaf production in Shanxi had been dropping for many years. By 1980 the area planted to tobacco was down to less than 10,000 mu, while tobacco leaf output was down to about 1 million jin. A decision was made recently at a provincial conference on tobacco production to increase the tobacco area to 51,500 mu and tobacco leaf output to about 10 million jin this year and to urge all localities suited to tobacco growing to plant tobacco on a trial basis so that the total tobacco area in the province will reach 200,000 mu after 1985, making Shanxi self-sufficient in tobacco leaves. [Taiyuan SHANXI RIBAO in Chinese 6 Mar 81 p 1]

CSO: 4007

BRIEFS

GRAIN PROCUREMENT OVERFULFILLED--By the end of December 1980, the amount of grain delivered to state granaries as grain taxes or as purchased grain surpassed that of the same period of 1979 by more than 370 million jin and exceeded the 1980 state grain taxation and purchase plan by more than 100 million jin. The volume of grain purchased at negotiated prices was over 700 million jin, about twice as much as in 1979. Over 3.8 billion jin of rice were delivered to granaries by the end of last December, an increase of more than 100 million jin over the same period of 1979. [Chengdu SICHUAN RIBER in Chinese 7 Jan 81 p 1]

PRODUCTION OF CASTOR OILSEEDS--By 25 December 1980, the amount of castor oilseeds delivered to state granaries in Sichuan surpassed that of the comparable period of 1979 by 500,000 jin. As a result of rapid increase in castor oilseed production in the past few years, Sichuan is now more than self-sufficient in castor oil. [Chengdu SICHUAN RIBAO in Chinese 9 Jan 81 p 1]

SILKWORM COCOONS' RECORD HARVEST--In 1980 Sichuan produced a record output of silkworm cocoons with a total output of 1.8 million dan, an increase of more than 20 percent over 1979. In 1980, over 200,000 mu of mulberry tree seedlings were planted. [Chengdu SICHUAN RIBAO in Chinese 19 Jan 81 p 1]

CSO: 4007

II. PUBLICATIONS

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Beijing ZHIWU XUEBAO [ACTA BOTANICA SINICA] in Chinese No 1, Jan 81 preceding p 1

9717
CSO: 4007

AUTHOR: SUN Lihua [1327 4539 5478]
WANG Zexi [3769 0463 0296]
FENG Yulan [7458 3768 5695]

ORG: All of Jiangning County Center of Agricultural Sciences, Jiangsu Province

TITLE: "Cobalt^{60} Treatment of Rudimentary Panicle of Rice"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 12, Dec 80 p 3

ABSTRACT: In the anther culture process, in order to improve the induction rate and enlarge the mutant types, the authors experimented with Co^{60} treatment of the young spike and its callus tissue. Three dosages of 100, 500, and 1,000 roentgens were used to treat 588-880 anthers of the 2 breeds of Shuangfeng No 4 and Wunong Zao. The callus induction rate was the highest when 100 R was used; for the 2 breeds it was 4.38 and 7.65 percent respectively. With the control group (no Co^{60} treatment), the rate was only 1.14 and 6.04 percent. With respect to mutant characteristics, they were expressed in F_1, and large grain types were obtained among the Wunong Zao young spikes treated. One stalk of Wunong Zao with the callus tissue treated produced a large grain type, with the test weight as high as 32.5 g (1000 grains) but the fruiting rate was slightly lower than normal. From the experiment, it was also learned that the dosage of treatment of young panicles should not be very large; generally speaking 100-300 R is the best.

AUTHOR: CHEN Ziye [7115 5261 2814]
YANG Daoxun [2799 6670 6064]
ZHANG Hengxi [1728 5899 2497]
XU Fengming [1776 7685 7686]

ORG: CHEN, YANG of Heilongjiang Provincial Bureau of Civil Aviation Management; ZHANG, XU of State-operated Yingyun Mountain Farm, Heilongjiang Province

TITLE: "Aerial Seeding of Rice Without Plowing"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 12, Dec 80 p 4

ABSTRACT: In foreign countries, aerial seeding of rice has had a history of more than 50 years. Many countries apply the technique extensively. In 1967, with the cooperation of the Bureau of Civil Aviation, the State-operated 857 Farm tried it for the first time in China. In 1968, 76, 76, and 77 other state-operated farms also experimented with the technique and obtained success. Due to the fact that the maximum load of rice seeds is 650 kg, under the condition of planting 35 jin per mu, only 37 mu may be planted in each flight and the cost is as high as 2 yuan/mu. This paper reports a new experiment in 1979 with canvas bags replacing metal cans for holding seeds and a new seed ejector design so that 2,000 jin of seeds may be loaded at once. Results of the experiment are reported. The major shortcoming remains, however, the fact that the cost is higher than planting with a machine.

AUTHOR: LI Yuan [2621 0336 1344]

ORG: Pei County Science Committee, Jiangsu Province

TITLE: "Problem of Excessively Large Pre-winter Colony Resolved With Methods of Hilling up, Earth Piling, or Scattering Soil"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 12, Dec 80 pp 5-7

ABSTRACT: In the past several years, the author and colleagues carried out survey research on the characteristic of excessively large pre-winter colony of wheat and its damaging results. At the same time, experiments were conducted with the use of methods of scattering, covering, and piling soil to resolve the problem. Results indicate that the method can turn the harmful effect of excessivly large pre-winter colony into a yield increasing characteristic. For winter and semi-winter breeds, hilling with soil to a thickness of 2-3 cm will resolve the problem and cause the seedlings to be stronger when they emerge from the soil in the spring. For spring or semi-winter breeds that are weak in pushing up soil, crushed soil should be lightly scattered over the seedlings to produce the beneficial effect without smothering them. For late planted wheat, banking should be done in the early spring, immediately after the ground thaw.

AUTHOR: ZHANG Pingzhi [1728 1627 3112]
LIU Jian [0491 1017]
XU Jiada [1776 1367 6671]

ORG: All of Xinjiang Akesu Regiment No 10 Center of Agricultural Sciences

TITLE: "Spring Planting of Winter Wheat"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 12, Dec 80 p 7

ABSTRACT: For more than 20 years, spring wheat varieties had been cultivated in the region of Akesu. Due to the fact that the stems of these varieties are soft, they lodge extremely easily and the yield of recent years has stayed at about 200 jin [per mu]. In 1978, the authors experimented with using winter varieties but still planting them in spring. Experimental results of 2 years demonstrate that this is a feasible technique. The planting time is extremely important, however. It is best to plant the winter varieties before 20 Feb, no later than the end of Feb at any event. The low temperature required for vernalization of strong winter varieties cannot be met in Akesu, however. It is, therefore, necessary to use weak winter varieties for this purpose.

AUTHOR: HU Guangyi [5170 1639 0034]

ORG: Heilongjiang Provincial Academy of Agricultural Sciences

TITLE: "Drought Damage to Spring Wheat and Its Prevention and Defense"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 12, Dec 80 p 9

ABSTRACT: Heilongjiang's spring wheat acreage amounts to 40 percent of that of the nation. Before the heading time, the water consumption of wheat should be 133.5 tons/mu, based upon an estimated yield of 500 jin/mu, but the rainfall for most areas of the province is only 150 mm, the equivalent of about 100 tons/mu, in an ordinary year. Since 1975, there has been a further reduction of annual rainfall to result in further weakening of drought resistance of the spring wheat. In order to overcome this problem, the author suggests light plowing to prevent moisture loss, selecting drought-resistant breeds, reserving a wider space between rows to facilitate hoeing and weeding, planting wheat in the marshes instead of mountain slopes, earlier and better quality planting. In the middle and late starch filling stage, irrigation will only be harmful, however.

AUTHOR: WANG Xian [3769 2009]
LI Zhizhong [2621 1807 0022]
WI Dongmei [5898 0392 2734]

ORG: All of Luoyang Municipal Institute of Agricultural Sciences, Henan Province

TITLE: "High Yield Seed Potatoes"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTRAL SCIENCES AND TECHNOLOGY NEWSLETTER] in Chinese No 12, Dec 80 pp 8-9

ABSTRACT: The institute began in 1977 to carry out research on high yield potato seeds. In the 3 years, the area of cultivation has been enlarged and the yield has become more than the local needs. The unit yield of spring potatoes reached 6,836 jin/mu, and 5,100 jin/mu for fall potatoes. There is now a profitable business of selling seed potatoes locally as well as outside of the region. The paper summarizes the experience into the following: (1) Develop medium late varieties; (2) Seeds should be strictly protected from degeneration; (3) Prolong the effective growing period; (4) Improve the photo-energy utilization rate.

AUTHOR: WANG Yunfu [3769 0061 4395]

ORG: Beijing Municipal Tong County Seed Company

TITLE: "How to Prevent Mixing and Preserve Purity of Hybrid Corn Seeds"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 12, Dec 80 p 10

ABSTRACT: Since hydrid corn began to be extended in Tong County of Beijing in 1965, it is now being cropped in more than 80 percent of the corn acreage of the country. The production practice reveals the necessity of doing a good job of preventing mixing and preserving purity of the seeds. Before 1975, this work was not sufficiently emphasized, and a new grouping lasted only 3-4 years before degeneration and mixing would alter it beyond recognition. Since then, the work of preventing mixing and preserving purity has been seriously carried out. The purity of the inbred lines has been maintained at above 98 percent and the F_1 hybrid seeds are kept 90 percent pure. The measures taken since 1975 to preserve the quality of seeds of hybrid corn are described.

6168
CSO: 4009/206

AUTHOR: None

ORG: Body Cell Hybridization Group, Institute of Tobacco Research, Chinese Academy of Agricultural Sciences

TITLE: "Interspecific Cell Hybridization of Tobacco a Success"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 1, 81 p 1

ABSTRACT: In plant body cell hybridization, enzyme is used to dissolve and isolate plant tissue cells and to reduce the cell wall to obtain wall-less cytoplast before using chemical and physical methods to fuse the plant cytoplasts of 2 plants of different species. The fused body is then induced to form a cell hybrid possessing the chromosomes of the parents. Cell hybridization is important as a basic research of biology and it may also be used to overcome inaffinity in distant hybridization to provide a great potential for creating new biological types and species. The authors used the ordinary tobacco and yellow-flowered tobacco as the raw materials and successfully obtained hybrids of 60-90 chromosomes. The work has just begun and it is yet uncertain whether new species of tobacco can be bred from these hybrids. The experimental procedure of cell hybridization is reported.

AUTHOR: WU Jianye [2976 1696 2814]

ORG: Guangxi Academy of Agricultural Sciences

TITLE: "Cultivating Rice Seedlings in Strong Acid Beds"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCES AND TECHNOLOGY NEWSLETTER] in Chinese No 1, 81 pp 11-13

ABSTRACT: Early planting and early transplanting are among the most important measures for obtaining rice high yield, but the temperature in the early spring is not stable and various degrees of rotten seedlings may occur to cause losses of surperior seeds. Based upon foreign information, various forms of seedling cultivation temperatures are studied to grow seedlings in greenhouses. Some foreign literatures also recommend an adjustment of pH of the seedbed to 4.5-5.5 and claim that in this manner, the seedlings have strong fertilizer and water absorbing ability and higher dry weight; they also have better adversity resistance and can survive in a low temperature of 12.5°C after transplantation. Since 1976, the author has proceeded with experiments of cultivating seedlings in dry or wet beds of different pH adjustments. It appears that seedlings grown in strong acid beds can effectively withstand spring cold. From 1977 to 78, 15 brigades of Yulin County and others also successfully used the acid bed method to prevent the problem of rotten seedlings. The experimental procedures and results are reported and there is also an attempt to explain the advantages of a strong acid bed.

AUTHOR: SI Wenxiu [0674 2429 0208]

ORG: Qi County Bureau of Agriculture, Henan Province

TITLE: "Heated Sunny Bed Technique of Cultivating Sweet Potato Seedlings"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 1, 81 pp 14-15

ABSTRACT: Beginning in 1975, many forms and techniques of cultivating sweet potato seedlings were experimented in Qi County and the new heated sunny bed technique was created in 1977. In the ensuing 4 years, the technique has been tested, demonstrated, and welcomed by the masses. In 1979, there was a belated cold wave in the spring, but the sweet potato seedlings of the 3,000 seedbeds constructed according to the new technique produced very satisfactory results. This experience has begun to be extended in some counties and communes of Kaifeng and Zhoukou Districts in 1980. The structure and the method of constructing and maintaining these seedbeds are described, as well as their advantages over other forms of seedbeds.

AUTHOR: PAN Borong [3382 0184 2837]

ORG: Zhoushuang Region Agricultural Technology Station, Xinghua County, Jiangsu Province

TITLE: "Sex Bait for Large Borers"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 1, 81 p 33

ABSTRACT: In 1978-79, for the purpose of understanding and studying the principle of occurrence of large borers and the technique of forecasting, a series of experiments and research were carried out. The results indicate that if female moths are used to attract male moths, the time of occurrence of the current generation of borers may be accurately known and the peak of egg laying and hatching may be precisely estimated. For example, on 4 May 78, 2 female borers were placed in a gauze cage and hung on a bamboo pole in the paddy, with a dish of water placed about 2 cm under the cage. The next day, 163 male borers were caught in the dish. The method of distinguishing male from female pupa and the method of raising pupae are described. The caged females appear to be most attractive to the males within the short period of 2 days following emergence, and the usefulness of the females that have mated appears to be greatly reduced.

AUTHOR: None

ORG: Crop Cultivation Research Office, Chinese Academy of Agricultural Sciences; Wheat Research Office, Institute of Crops, Beijing Municipal Academy of Agricultural Sciences

TITLE: "Scientific Management Technique of High and Stable Yield--Method of Promoting or Supressing With Wheat Leaf Age as Indicator"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 2, 81 pp 1-2

ABSTRACT: Leaf age indicator method of promoting or suppressing means to use the number of leaf-blades on the main stem of the wheat plant as an index to determine the promoting or suppressing measure to be adopted in wheat culture. This is a scientific method of management. Every leaf blade on the main stem of a wheat plant is closely related to the growth and development of a given organ of the plant, such as the root system, tillers, internodes, leaf sheath, and spike. There is a great difference between the winter and the spring varieties, however. For example, the main stem of strong spring varieties has generally 7-8 blades while that of winter varieties that are planted at a proper time may have 13-14 blades. With the former, when the 4th blade appears on the main stem, it is the time of evolvement of the protective glume and the extension of the first node; with the latter the same stage occurs when the 11th blade appears. Effects of fertilizer and water application vary during different leaf blade age of the plant and the needs of the plant may be determined by counting the number of leaf blades on the main stem.

AUTHOR: YANG Quanyong [2799 2164 3279]
ZHANG Zuzhen [1728 4371 3791]

ORG: Both of Institute of Crops, Chinese Academy of Agricultural Sciences

TITLE: "Less Plowing, More Fertilizer to Grow Rice Seedling in Ventilated Beds"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 2, 81 p 13

ABSTRACT: Inspired by the experiment with direct seeding of rice in dry fields carried out in 1963, the authors made 4 changes in the technique of cultivating rice seedlings: (1) The technique of turning and plowing seedbeds is changed into no plowing or very little plowing; (2) Scattering fertilizer in the seedbed is changed into laying one surface layer of fertilizer; (3) Wet leveling and furrow making to prepare seedbeds is changed into dry leveling and furrow making; (4) Moist paddy seedbed is changed into dry seeding and covering with dry soil. In this manner, the soil of the seedbed is dry and ventilated. The land preparation process is considerably simplified. All the work is performed in the dry field. The seedbed is not plowed. The fertilizer is laid on top of the topsoil. After seeding, water should be brought into the furrows to level with the mounds where the soil should remain loose and well ventilated. In this manner, the germination rate may be as high as 90 percent. The concrete procedure is described.

AUTHOR: XU Chengjian [6079 2110 7003]

ORG: Xiaogan County Science Committee, Hubei Province

TITLE: "Growing Beans in Cotton Fields"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 2, 81 p 16

ABSTRACT: In the past several years, some communes and brigades of the cotton producing region of Hubei Province intercropped black beans in barley fields before intercropping cotton in the bean field to form, gradually, the 3-crop system of barley-beans-cotton. According to the experiment conducted by Fengsheng Brigade in 1975, with the 3-crop system, the average yield was 386.5 jin of grain (Zaoshu-No 3 barley) 160.9 jin of black beans, and 215.4 jin of seed cotton per mu; with the 2-crop system of cotton and grain, the average yield was 436 jin of grain and 206 jin of seed cotton. If beans are considered as the equivalent of grain, then, with the 3-crop system, the gain is 11 jin of grain and 9.4 jin of seed cotton. For every 100 jin of black beans, 13 jin of oil may be produced with an additional 87 jin of residual cake (good for feed or fertilizer.) With the additional crop of beans, the soil granular structure and fertility are improved as well. The concrete intercropping design is described with drawing depicting the space in between rows of barley and/or beans and the space where cotton is to be planted following the barley harvest.

AUTHOR: WU Junlan [0702 0193 5695]

ORG: Shanxi University of Agriculture

TITLE: "Trace Elements Applied for Cotton"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 2, 81 p 29

ABSTRACT: In 1973-78, experiments were carried out to test the effects of applying manganese, molybdenum, zinc, boron, or copper in the calcareous soil of cotton fields of the province. The tests were carried out in various points in Taigu, Yuci, etc. The trace elements were used in solutions of densities of 0.02-0.1 percent to soak seeds in 12-24 hours. The seeds of the control were soaked in water, and every test iten was repeated 3 times. According to observed results of these years, manganese and molybdenum have the obvious effect of promoting the nutritional growth of cotton. These trace elements may cause germination to be 2-3 days earlier and the seedlings are strong but not overly prosperous. The cotton plant may grow to as tall as 43 cm while the control plant is only 30 cm in height. The treated plant bears 8 fruits, while the control only five. For the calcareous soil, the effects of boron and copper applications are slight.

AUTHOR: LI Chengyun [2621 1504 0061]
YUN Wanxin [6892 8001 9515]
HE Yucheng [0149 5148 2052]
XIA Dianwen [1115 1156 2429]

ORG: All of Plant Protection Station, Yaan District, Sichuan Province

TITLE: "Wheat Snow Mold"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 2, 81 p 31

ABSTRACT: Snow mold damage to wheat began to occur in the valleys of Yaan and Qingnong Rivers of Sichuan in the 60's but it was too mild to arouse any serious attention. In 1978 it caused the seedlings of more than 30,000 mu of wheat fields in Yaan, Tianquan, Lushan counties to be dead. Since then, the damage grew to be more serious every year. Laboratory research began in 1978 to isolate and culture the pathogens. The snow mold fungus was identified. For prevention, the paper suggests that disease-resistant breeds should be selected and planted at a time suitable for each location. The severity of the disease may be effectively reduced if the wheat is not planted too early. Nitrogen fertilizer should be coordinated with potassium and phosphorus and potassium fertilizer is especially important, and more farm fertilizer application is very helpful. Drugs may be used after the disease has occurred. The symptoms of the disease and factors contributing to its occurrence are discussed.

AUTHOR: None

ORG: Anguo County Institute of Agricultural Research, Hebei Province; Entomology Teaching and Research Office, Hebei University of Agriculture

TITLE: "Introducing Natural Enemies to Prevent and Control Cotton Aphids"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 2, 81 p 32

ABSTRACT: Anguo County is an old cotton producing region. Prolonged and continuous applications of toxic chemicals for the prevention and control of cotton aphids have killed a large quantity of natural enemies of aphids, which have also grown to be more and more resistant to these chemicals. The number of aphids increases daily and so does the environmental pollution. In the spring of 1979, an experiment was conducted with intercropping winter rape in 5.16 mu of cotton fields. The tender leaves of rape attracted a large quantity of aphids which brought over many of their natural enemies, including lady beetles, green lacewings [Chrysopa spp.] mantis, spider, etc. This technique essentially depends upon the fact that aphids begin to bother the intercropped rape early and by the time the cotton seedlings start to grow, sufficient quantity of natural enemies are in the field to control the aphids and prevent them from damaging the cotton plants. After the harvest, the soil in the furrows is picked up to be used to cover the cotton stubble so as to protect the natural enemies and to allow them to overwinter in the field.

AUTHOR: MENG Guangqin [1322 1684 0530]

ORG: Comprehensive Chemical Analysis Laboratory, Heilongjiang Provincial Academy of Agriculture

TITLE: "Longke-A Semimicro Nitrogen Analyzer"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 2, 81 p 30

ABSTRACT: At present, for volume analysis of nitrogen, the 2 forms of distillation and steam distillation are generally used in China. The merits of domestic and foreign instruments of these forms were studied in 1973-78 by the author and colleagues to produce the Longke-A semimicro nitrogen analyzer, which has been tested by more than 20 organizations in 12 provinces (cities) of the country. In 1979, it was judged to be a national fruit of scientific research. For several years, the laboratory used it to analyze the nitrogen content of soils and fertilizers and the crude protein content of beans and their stalks, more than 3,000 items in all to prove the stability and properties of the instrument. The paper includes a photo depicting the instrument and a description of its structure and properties.

AUTHOR: LI Yucai [2621 5148 2088]

ORG: Jiangsu Provincial Institute of Domestic Fowl Research, Jiangdu County, Jiangsu Province

TITLE: "Feeding Geese With Huai Leaf Powder and Pine Needle Powder"

SOURCE: Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 2, 81 pp 35-36

ABSTRACT: This paper is divided into 2 short chapters: (1) Using Huai [Chinese scholartree: Sophora japonica] leaves to feed geese: The institute experimented with mixing 7-8 percent Huai leaf powder in the regular feed of chickens to replace multiple vitamin and/or green feed and the result had always been satisfactory. In 1980, based upon the fact that geese have a great capacity for digesting green feed, an experiment was conducted with mixing 40-80 percent Huai leaf powder in the grain feed. An analysis of the protein contents of the leaf powder is included in the report. (2) Feeding pine needle [leaves] powder to geese: As pine trees are distributed everywhere in China and pine needles are rarely ever utilized, the institute carried out an experiment in 1979 with feeding geese a mixed feed containing 10 percent pine needle powder. Very satisfactory results were obtained. Contents of amino acids in the powder made from leaves of Pinus massoniania Lamb are included in the report.

6248
CSO: 4009/207

AUTHOR: None

ORG: None

TITLE: "Opinions Concerning Accelerating the Development of Winter Wheat on the Arid Highlands of the Loessical Plateau"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 2, 20 Feb 81 pp 5-8

ABSTRACT: The 4 provinces of Shaanxi, Shanxi, Gansu, and Ningxia (Districts) were requested in Aug last year by the Ministry of Agriculture to organise related comrades of agricultural administrations, scientific research units, and schools and colleges to summarize and exchange understandings and experiences regarding problems of developing winter wheat in the arid highlands of the loessical plateau. These opinions are published in the paper in 4 separate sections, without specifying the authors or organizations who must have submitted these opinions. All 4 segments of the paper appear to share the view that there are no problems in the region with respect to water and heat energy required for winter wheat and the weather is not a special problem for winter wheat to overwinter. Judging from the current condition, the yield is low, however, primarily due to the fact that the soil is thin and the water is not particularly plentiful. Crop rotation and the development of animal husbandry are also the shared opinions as being favorable for promoting wheat production.

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TITLE: "Effects of a Plastic Film Ground Cover on the Soil Moisture Movement of Cotton Fields"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 2, 20 Feb 81 pp 9-11

ABSTRACT: Economical and effective use of natural precipitation is very important for increasing crop yield, especially in arid and semi-arid regions. It is known that a ground cover, with soil, sand, stone, paper, stubble, etc. has a positive effect on agricultural production. Since the appearance of plastic film, its moisture and temperature preserving effects and its yield increase results have long been emphasized by foreign and domestic scientists. For the purpose of providing factual data, however, the authors carried out an experiment in a semi-arid region of 35.3° N. Lat. and 110.8° E. Long. to study the effects on soil moisture movement when the ground surface is covered with plastic film with no irrigation. Results of small area experiment in 1980 revealed, within the first 6 hours, a reduction of 2.63 percent of the weight of the soil in evaporation per hour. The plastic cover forms a physical barrier which cuts off the pathway of exchange between moisture and the atmosphere so that moisture can only circulate under the film. Effects on deep layer moisture and problems of streams and seepage, etc. are also reported.

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TITLE: "Analysis of Ecological Types of Soybean Breeds in Shanxi Province: I. Ecological Regionalization of Soybeans and the Geographical Distribution of Growth and Development Period"

SOURCE: Taiyuan SHANXI NONGYE KEXUE [SHANXI AGRICULTURAL SCIENCES] in Chinese No 2, 20 Feb 81 pp 16-19

ABSTRACT: Shanxi Province has rich resources of soybean breeds and types. In 1974 to 1980, the author and colleagues carried out a study on 765 specimens produced in the province. The study included planting and cultivating these specimens in an identical area, in an identical ecological environment, and under the same cultivation and management condition. The growth and development period, one of the major index of adaptability of a breed, was studied for the purpose of understanding the distribution principle of the growth and development period of soybeans. Based upon this study, the natural condition of ecological differences of soybeans in the province and the geographical distribution of growth and development periods of soybean breeds were analyzed. This paper reports the data obtained from these studies. The paper, presumably, is to be continued, although this is not clearly stated.

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TITLE: "Several Problems of Sugar Cane Cultivation in Guangdong Province"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 2, 8 Mar 81

ABSTRACT: The sugar cane acreage and total sugar production of Guangdong Province occupy an important position in the nation's cane sugar production and further development to establish an advanced base of sugar industry should be very desirable. At present, the unit yield is low, only about 2.303 tons compared with the 3.72 tons average yield in the world. The average yield in the USA is 6.16 tons/mu and that of Australia 5.22 tons! Judging from the viewpoint of cultivation technique, the author suggests the following measures: (1) Soil fertility is in need of restoring and improving; (2) Irrigation and drainage should be made possible; (3) Ratoon sugar cane should be managed better; (4) Selecting suitable breeds and cultivation technique to grow summer planted sugar cane; (5) Developing breeds with ratoon characteristic, disease resistance, and high sugar content and breeding more varieties of sugar cane. These measures are proposed to overcome the current problems of sugar cane culture in the province.

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TITLE: "Preliminary Report of on the Technique of Determining the Length of Xian Rice Caryopsis in the Initial Stage of Development"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 2, 8 Mar 81 pp 17-19

ABSTRACT: In 1973, a molybdenum target x-ray machine was successfully made in China. The Nanjing Forest Products Engineering College used it to inspect the internal structure of synthetic boards and to study the quality of tree seeds. In 1980, the authors used a DGX-4 soft x-ray machine to take continuous pictures of the flower of 6 Xian rice breeds to obtain 1051 frames which were placed on a 80-1 microscopic telemetric device to proceed with quantitative measurement of the extension of caryopsis of these breeds. The method of measuring and the experimental results are reported.

AUTHOR: GUO Guanhua [6751 0034 5478]

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TITLE: "Observation of Effects of Using Azolla filiculoides Lam as Green Manure for Early Rice Crop"

SOURCE: Guangzhou GOUNGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 2, 8 Mar 81 pp 26-27

ABSTRACT: Ximanjianghong [Azolla filiculoides Lam] is also known as American duckweed. In 1980, the Dongguan County grew more than 70,000 mu of it in rice paddies and turned most of it over to serve as green manure. Surveys indicated a yield increase of 23-200 jin/mu. Its effect was the best on improving the physical structure of clay soil. According to the experiment carried out by Zhongtang Commune Agricultural Science Station, on the average, for every 10,000 jin of this duckweed green manure, the yield of rice may be increased 82.5 jin, 47.6 jin higher than the use of local duckweed. The major reason for the yield increase was the fact that there were 29,000 more effective spikes. The fertilizer effect of this duckweed was also compared with that of Astragalus sinicus, Japanese duckweed, and a mixed ammonium carbonate, phosphorus, and potassium fertilizer.

AUTHOR: CHEN Xihua [7115 3556 5478]

ORG: Dongtai Farm, Guangdong Province

TITLE: "Ways of Increasing the Yield of Paddy Rice Planted in Mountain Ravines"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 2, 8 Mar 81 pp 32-33, 31

ABSTRACT: The Dongtai Farm has 652 mu of paddies, all of which are in the mountains and some are in deep ravines of the mountains. The drainage and irrigation condition is poor; the soil is acid; and there is a great deal of shade. The unit yield is only about 500 jin/mu. In order to search for ways of increasing the yield, some experiments and survey analyses have been conducted on the relationship between different breed of rice and the yield, the relationship between different fertilizers and the yield, the yield increase effects of reasonable drainage and irrigation systems and the development of root system of the rice, and the relationship of planting density and the incidence of diseases. This paper reports the results of these studies.

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ORG: Zhaoqing District Bureau of Agriculture

TITLE: "Preliminary Analysis of the Relationship Between the Yield of Spring Planted Peanuts of Zhaoqing District and the Weather Factors"

SOURCE: Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 2, 8 Mar 81 pp 34-35, 23

ABSTRACT: In Zhaoqing District, peanuts are primarily planted in the spring, about 450,000 mu of them every year. Since the middle 60's, the yield increase has not been very great. For example, the average unit yield was 134 jin in 1979, only 46 jin higher than that of 1965. Furthermore, this increase is not stable either. In the years from 1965 to 1979, the yield increased in 8 years, decreased in 6 years, in one year it broke even. Analyses of the yield fluctuations and the weather conditions of these years indicate that such unfavorable weather factors as low temperature and frequent rain in early spring and high temperature and dry weather in the late stage have a serious effect on the yield. The author suggests that if the planting time is moved earlier to the late Feb - early Mar instead of the middle to late Mar, much of the bad weather conditions may be avoided.

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AUTHOR: LIN Chengka [2651 2110 2818]

ORG: Ocheng County Institute of Agricultural Sciences

TITLE: "Reasons for Late Start of Early Rice and Measures to Promote Early Development in the Lake Area of the Changgang Plain of Ocheng County"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 3, Mar 81 pp 11-14

ABSTRACT: In the lake area, certain amount of acreage of the early rice crop regularly suffers from delayed development. The yield reduction may be 20-30 percent while in severe years the paddies must be turned over to proceed with a single rice crop as the early rice seedlings turn stiff and die instead of growing. The paper describes the major causes as follows: (1) Seedlings transplanted too deep in the soggy clay soil; (2) A high water table and low soil temperature induce accumulation of toxic and reduced materials in the soil; (3) Turning the green manure too late and a phosphorus deficiency of the soil prevent seedlings from growing; (4) Prolonged continuous cropping causes the soil to be in an anaerobic state. Corrective measures suggested in the paper include basic construction emphasizing improving the drainage system; managing irrigation water scientifically; providing a suitable of chemical fertilizer and increasing the amount of phosphorus fertilizer to make up for the slow decomposition of green manure due to the low temperature; practicing a rotation system of paddies and dry cropping; and extending the use of wholesale seedlings.

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TITLE: "Fruiting Rate of Hybrid of Triticale and Wheat and the Fruiting Condition of F_1 Observed"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 3, Mar 81 pp 15-20

ABSTRACT: Distant hybridization is an important method of creating new species and triticale is in fact an artificially created new crop from rye and wheat. For the purpose of breeding new varieties of early ripening, large spike, high yield, and disease resistant wheat, triticales (Beijing octoploid triticale No 2, Canada hexaploid triticale A6025, and Mexico hexaploid triticales T19-023, T16-007, B27-032, and Guangmo) are used for hybridization with primarily a local superior breed Jingzhou Aizaoshu No 21 in normal and reverse crosses to make 21 groupings. The fruiting rate of the hybrids is obserbed to be 3.0-42.5 percent [1764 blooms and 318 seeds were obtained.] From the 318 seeds, 140 F_1 seedlings are obtained to average a germination rate of 44.02 percent. Seeds of 2^1 groupings failed to germinate. Affinity appears to be better for T19-023. Under the condition of free pollination, F_1 of 13 groupings, with T19-023 as the mother, averages a fruiting rate of 11.97 percent; with Beijing Triticale No 2, the average fruiting rate of F_1 is only 2.78 percent. The significance of the observed results is discussed.

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TITLE: "A Study on the Genesis of Cotton Seedling Root Diseases and Their Prevention and Control With Drugs"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 3, Mar 81 pp 23-27

ABSTRACT: Cotton seedling root diseases are the major problem affecting the survival of seedlings, dense planting, and early growth of seedlings. Since the early 70's, due to the fact that mercury-containing drugs had ceased to be manufactured while the supply of substitutes (such as arsyl agents) has not caught up with demands, seeds have been planted without drug treatment, and root diseases occur to 20-30 percent of the seedlings every year. This paper reports surveys and laboratory experiments to determine the pathogens of these root diseases (about 37.5 percent anthracnose, 29.2 percent damping-off fungus, 17.7 percent red rot fungus, and 1.4 percent others) Various drugs are tested as substitute for mercury agents for seed treatment. Further tests are needed to determine the density and method of application of the arsyl agents.

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TITLE: "Brief Report of Experiment With Artificially Aided Migration of Spiders Into Rice Paddies"

SOURCE: Huanggang HUBEI NONGYE KEXUE [HUBEI AGRICULTURAL SCIENCES] in Chinese No 3, Mar 81 pp 27-29

ABSTRACT: Paddy spider is an important natural enemy of rice pests and there are plentiful of them in Enshi District. For the purpose of understanding the condition of spiders feeding on pests under the natural ecological system and under the condition of artificially aided migration, an experiment was carried out beginning on 29 May 80. Bundles of hay were placed in wheat fields that had been newly plowed and had numerous spiders. Water was immediately pumped into the fields to force the spiders to climb up the hay bundles. These bundles with 32 spiders per bundle on the average were placed in newly transplated paddies and observed every 5 days, to count the number of leaf hoppers, the number of spiders, and finally the yield and to compare these paddies with control paddies with and without the application of chemical pesticides. Results indicate that 5 applications of pesticides produce about the same effect as 50 bundles of hay with spiders, while the yield increase with 100 such bundles of hay is 54.6 percent.

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